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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/723,044 | 11/25/2003 | Richard K. Errickson | POU920030189US1 | 7804 |
| 46429 | 7590 | 03/13/2006 | EXAMINER | |
| CANTOR COLBURN LLP-IBM POUGHKEEPSIE 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002 | | | NGUYEN, THAN VINH | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2187 | |
| DATE MAILED: 03/13/2006 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/723,044

Applicant(s)

ERRICKSON ET AL.

Examiner

Than Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/25/03, 3/4/04.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>11/25/03, 3/4/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-19 are pending.
2. The IDSes, filed 11/25/03 and 3/4/04, have been considered.

Claim Rejections - 35 USC § 112

3. Claims 1-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
4. As to independent claim 1, 13, 18, and 19 it is unclear as what is meant by “in accordance with a definition of a z/Architecture”. It is unclear as how the definition of a z/Architecture is defined by the specification and how this definition relates to the claimed instructions. Is Applicant claiming the entire z/Architecture (a computing architecture) also or is the z/Architecture is an environment in which the invention operates? If the z/Architecture is an environment, it will not be given patentable weight. If the z/Architecture is a computing architecture is being claimed, Applicant must provide details of this architecture being claimed. Without knowing more details, one of ordinary skills cannot clearly understand the scope of the invention. Applicant is advised to clarify/define the phrase “a definition of a z/Architecture”, without adding new matter.
5. Claims 2-12, 14-16 are also rejected for incorporating this deficiency.
6. Claim 8 and 15 recites the limitation "semiprivileged instructions" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim. Applicant also did not define “semiprivileged instructions” in the specification.

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7. Claim 6 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is unclear how an address space can alleviate use of the main address space. Where is this alleviation function defined for the address space? It appears that the alleviation is an expected result, not a function performed by the first address space. If it is an expected result, claim 6 does not further limit the parent claim since it does add more limitations/details to the parent claim.

Claim Objections

8. Claims 3-5 and 14 are objected to because of the following informalities: each of these claims is missing a period (.). Appropriate correction is required.

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1-8,11-15,18,19 are rejected under 35 U.S.C. 102(e) as being anticipated by Bailey et al (US 6,598,144 B1).

As to claims 1,6,13,18,19:

10. Bailey teaches the claimed system and method of performing memory mapped input output operations to an alternate address space comprising: establishing a first instruction directed to a first memory mapped input output alternate address space associated with an adapter to store data in accordance with a definition of a

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z/Architecture; establishing a second instruction directed to said first memory mapped input output alternate address space associated with an adapter to load data in accordance with said definition(s) of said z/Architecture (send data instruction to adapter's MMIO; 4/25-32) (read data instruction to adapter's MMIO; 4/30-35); and wherein a process issues at least one of said first instruction and said second instruction and thereby causes execution of at least one of said store and load with said first alternate address space (access to MMIO address space; 4/15-41).

As to claim 2:

11. Bailey teaches said first alternate address space is not a partition of a main address space from which said issuing process is executing (adapter address space is separate from system address space; 4/60-62).

As to claim 3:

12. Bailey teaches said process issuing said at least one of said first instruction and said second instruction and thereby causes execution of at least one of said store and load with said first alternate address space operates in a problem state of a machine (issue read/write to MMIO address space in user mode; 2/11; 4/30-40).

As to claim 4:

13. Bailey teaches said execution includes said at least one of said store and load with an allocated resources associated first alternate address space (4/15-41).

As to claim 5,14:

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14. Bailey teaches said problem state corresponds to a least privileged execution state in said z/Architecture (user/kernel mode; 2/10-11).

As to claim 7:

15. Bailey teaches at least one of said first instruction and said second instruction is executed without supervisory state intervention (user mode; 2/11).

As to claim 8,15:

16. Bailey teaches said first instruction and said second instruction are semiprivileged instructions that may be executed in problem state, wherein ownership of a specified resource of a specified adapter determines a privilege required for execution of said semiprivileged instructions (user/kernel mode; 2/10-11).

As to claim 11:

Bailey teaches said adapter includes address spaces as partitions of said alternate address space (MMIO/system address spaces; 4/60-65).

As to claim 12:

17. Bailey teaches said multiple address spaces are governed by at least one of a resource type and storage area types associated with said adapter (system and MMIO address spaces are for different resources; 4/55-65).

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

19. Claims 9-10,16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bailey et al (US 6,598,144 B1).

As to claim 9,10,16,17:

20. Bailey does not specifically teach including a second alternate address space associated with a second adapter, the second alternate address space being different than the first alternate address space. Bailey only describes one host channel adapter with its MMIO address space. Bailey does teach operating in a system environment in which multiple host channel adapters are used (1/49-61). It would have been obvious to one of ordinary skills in the art at the time of the invention to use multiple host channel adapters, each with its own address space, in the invention of Bailey, to provide for more sharing of data across cluster resources, as suggested by Bailey.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Than Nguyen whose telephone number is 571-272-4198. The examiner can normally be reached on 8am-3pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Than Nguyen can be reached on (571) 272-4201. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Than Nguyen
Primary Examiner
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